University of California
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Berkeley, California

SEASONAL LABOR NEEDS FOR CALIFORNIA CROPS

SANTA BARBARA COUNTY

Progress Report No. 42

by

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(Farm Labor Survey -- January-June, 1936)

Progress Report #42 January, 1936

Seasonal Labor Needs for California Crops

Santa Barbara County

Scope of Presentation.-- The following considerations govern the presentation of this progress report:

1. The data are confined to the area indicated above.

2. The data are confined solely to crops, livestock needs being ignored.

3. The findings apply only to occasional or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.

4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including teamsters, tractor drivers, irrigators, hay balers, thresherman, and shed packers of vegetables or fruits.

5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.

6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Santa Barbara County is one of California's southern coast counties, its southeast corner being about 55 miles from the center of Los Angeles. It is bounded upon the west by the Pacific Ocean and on the east by precipitous mountain ranges, on the north and south by counties the terrain of which is similar to that of Santa Barbara County. The farming areas of the county consist of three principal areas. One in the northwest portion of the county opening upon the coast is approximately 8 miles by 20 in extent, lies along the Santa Maria River, and surrounds the towns of Santa Maria, Guadalupe, and Betteravia. Another area lies in the west central portion of the county. This area likewise opens upon the coast, extending about 36 miles up the Santa Ynez River. The western portion of this belt occupies an area which averages about 8 by 11 miles, the eastern portion an area about 6 miles square, while the intermediary strip connecting these two areas varies from about 1 to 2 miles. The principal towns in this area are Lompoc and Santa Ynez. The third area occupies a strip of land bordering the ocean in the easterly half of the southern boundary of the county for a distance of about 30 miles, varying in width from about 3 to 4 miles. The principal towns of the third area are Goleta, Santa Barbara, and Carpinteria.

The county contains a total of 1,683,200 acres, of which land in crops during 1935 was reported as:*

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*"Agricultural Crop Report of Santa Barbara County," compiled by Eugene S. Kellogg, County Agricultural Commissioner, January 1, 1936.

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Seasonal Labor Needs For California Crops

Santa Barbara County

Scope of Presentation.-- The following considerations govern the presentation of this progress report:

1. The data are confined to the area indicated above.

2. The data are confined solely to crops, livestock needs being ignored.

3. The findings apply only to seasonal or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.

4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including tractor drivers, irrigators, hay balers, threshermen, and dried peckers of vegetables or fruits.

5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.

6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems likely to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Santa Barbara County is one of California's southern coast counties. It is southeast of Ventura County, about 25 miles from the center of Los Angeles. It is bounded upon the west by the Pacific Ocean and on the east by precipitous mountain ranges, on the north and south by counties the terrain of which is similar to that of Santa Barbara County. The fertile areas of the county consist of three principal areas. One in the northwest portion of the county opening upon the ocean is approximately 3 miles by 20 in extent, lies along the Santa Maria River, and surrounds the towns of Santa Maria, Guadalupe, and Betteravia. Another area lies in the west central portion of the county. This area likewise opens upon the coast, extending about 20 miles up the Santa Ynez River. The western portion of this belt comprises an area about 8 by 11 miles, the eastern portion an area about 6 miles square, while the intermediary strip connecting these two areas varies from about 1 to 2 miles. The principal towns in this area are Lompoc and Santa Ynez. The third area comprises a strip of land bordering the ocean in the southerly half of the southern boundary of the county for a distance of about 30 miles, varying in width from about 3 to 4 miles. The principal towns of the third area are Goleta, Santa Barbara, and Carpinteria.

The county contains a total of 1,888,320 acres, of which land in crops during 1936 was reported as*

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*"Agricultural Crop Report of Santa Barbara County," compiled by Eugene S. Kolleg, County Agricultural Commissioner, January 1, 1936.

	Acreage
Field crops	131,362
Vegetable crops	28,111
Orchards (bearing)	6,845
Total	166,318

The farming area located in the northwest portion lies generally below the 600-foot contour; the west central portion below 800 feet; and the southern coastal belt below 250 feet. A variety of soils are represented, seventeen soil series being noted and twenty-nine soil types. The predominating soil textures are the lighter phases of sands, fine sandy loams, loams, and silty clay loams, with depths of from 3 to 6 feet or more.

Crops, Acreages, and Production.-- The basis used in calculating occasional or seasonal need for labor, other than that furnished by farm operators and regularly employed workers, appears as table 1.

TABLE 1

Basis for Calculating Seasonal Labor Requirements -- Santa Barbara County

Crops	Acreage	Production
Field crops:		
Alfalfa	7,920	37,950 tons
Barley	21,140	282,964 cwt.
Beans	41,862	284,614 cwt.
Grain hay	27,500	41,224 tons
Mustard	6,673	66,723 cwt.
Oats	10,323	107,220 cwt.
Onions	243	30,451 cwt.
Potatoes	1,659	359,679 cwt.
Sugar beets	6,949	74,133 tons
Wheat	5,313	73,310 cwt.
Vegetable crops:		
Anise	150	60,000 crates
Bell peppers	151	50,760 crates
Broccoli	357	139,698 crates
Cabbage	106	8,640 crates
Carrots	5,569	1,670,700 crates
Cauliflower	4,312	123,320 crates
Celery	877	526,200 crates
Endive (chicory)	261	65,250 crates
Lettuce	7,133	828,240 crates
Limas (green)	332	35,154 hampers
Parsley	50	(A decreasing industry and ignored)
Peas	4,398	395,820 hampers of 30 pounds
Tomatoes	1,792	403,200 packed lugs of 32 pounds net.
Orchard fruits:		
Walnuts	3,260	1,824 tons
Lemons	3,065	544,272 packed boxes
Oranges	320	26,796 packed boxes
Avocadoes	200	157 tons
Miscellaneous:		
Vegetable and flower seeds	1,780	--
Bulbs	45	--

Note: The above recorded figures of vegetable acreages include a portion of San Luis Obispo County -- the Oso Flaco district -- just across the Santa Maria River from Guadalupe and a part of the Guadalupe deal. This acreage and production amounts to about 25 per cent of the totals as tabulated above.

	Acreage
Field crops	151,565
Vegetable crops	28,111
Orchard (bearing)	6,946
Total	186,312

The farming area located in the northwest portion lies generally below the 800-foot contour; the west central portion below 800 feet; and the southern coastal belt below 280 feet. A variety of soils are represented, seventeen soil series being noted and twenty-nine soil types. The predominating soil textures are the lighter phases of sandy, fine sandy loams, loams, and silty clay loams, with depths of from 3 to 6 feet or more.

Crops, Acreages, and Production.-- The basis used in calculating seasonal or seasonal need for labor, other than that furnished by farm operators and regularly employed workers, appears as table 1.

TABLE 1

Basis for Calculating Seasonal Labor Requirements -- Santa Barbara County

Crops	Acreage	Production
Field crops:		
Alfalfa	7,920	47,950 tons
Barley	21,140	282,964 cwt.
Beans	41,885	284,814 cwt.
Grain hay	27,500	41,224 tons
Mustard	6,675	66,752 cwt.
Oats	10,825	107,250 cwt.
Onions	265	30,451 cwt.
Potatoes	1,060	389,670 cwt.
Sugar beets	6,040	74,185 tons
Wheat	6,812	73,310 cwt.
Vegetable crops:		
Asiae	180	80,000 crates
Bell peppers	181	80,760 crates
Broccoli	587	139,653 crates
Cabbage	106	8,940 crates
Carrots	8,869	1,870,700 crates
Cauliflower	4,212	123,850 crates
Celery	877	858,260 crates
Endive (chicory)	281	86,261 crates
Lettuce	7,158	829,240 crates
Limas (green)	822	36,184 hampers
Parsley	80	(A decreasing industry and ignored)
Peas	4,258	398,880 hampers of 30 pounds
Tomatoes	1,752	403,200 lugged boxes of 22 pounds net.
Orchard fruits:		
Walnuts	3,260	1,824 tons
Lemons	2,068	644,272 packed boxes
Oranges	820	85,758 packed boxes
Avocados	200	187 tons
Miscellaneous:		
Vegetable and flower seeds	1,760	--
Bulbs	48	--

Note: The above recorded figures do not include vegetable production from Orchard Fruits -- the Oso Flaco district -- but across the Santa Maria River from Guadalupe and a part of the Guadalupe deal. This acreage and production amounts to about 25 per cent of the totals as tabulated above.

Operations Requiring Seasonal Labor and Times of Need.-- Farm operations requiring the use of seasonal or occasional labor for the various crops raised in Santa Barbara County (including the Oso Flaco district of San Luis Obispo County, which properly is included with the Santa Barbara County acreages) are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack, and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops -- Santa Barbara County (and the Oso Flaco district of San Luis Obispo County)

Crop	Operation	Time of need
Field crops:		
Alfalfa	(Use of seasonal help inconsequential and hence ignored.)	
Barley	(Use of seasonal help inconsequential and hence ignored.)	
Beans	Two hoeings	May 15-31 June-July 10
	Piling	September
Grain hay	(Use of seasonal labor inconsequential and hence ignored.)	
Mustard	(Use of seasonal labor inconsequential and hence ignored.)	
Oats	(Use of seasonal labor inconsequential and hence ignored.)	
Onions	Hand planting (15 per cent of acreage)	April
	Hand weeding and thinning	May 15-31 (one-third of acreage)
	Hand hoeing	June 1-15 (two-thirds of acreage) June-July (one-third of acreage)
	Pulling, topping, and sacking	Sept.-Oct. (one-half of acreage each month)
Potatoes		
Spring crop (350 acres)	Two hoeings	(January (February
	Digging by hand (25 per cent of acreage)	April-May (one-half of acreage each month)
	Picking up and sacking	April-May (one-half of acreage each month)
Fall crop (1,300 acres)	Two hoeings	(May (June
	Digging by hand (25 per cent of acreage)	Sept.-Oct. (one-half of acreage each month)
	Picking up and sacking	Sept.-Oct. (one half of acreage each month)
Sugar beets	Thinning	March (60 per cent of acreage) April (30 per cent of acreage) May (10 per cent of acreage)
	Hoeing (twice)	April (60 per cent of acreage) May (90 per cent of acreage) June (40 per cent of acreage)

(Table 2 continued on next page.)

Operations Requiring Seasonal Labor and Times of Need.-- Farm operations requiring the use of seasonal or occasional labor in the various crops raised in Santa Barbara County (including the Oso Flaco district of San Luis Obispo County, which properly is included with the Santa Barbara County acreages) are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack, and prepare various commodities for shipping and marketing.

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Crop	Operation	Time of need
Field crops:		
Alfalfa	(Use of seasonal help inconsequential and hence ignored.)	
Barley	(Use of seasonal help inconsequential and hence ignored.)	
Beans	Two hoeings	May 15-31
		June-July 10
	Pulling	September
Grain hay	(Use of seasonal labor inconsequential and hence ignored.)	
Mustard	(Use of seasonal labor inconsequential and hence ignored.)	
Oats	(Use of seasonal labor inconsequential and hence ignored.)	
Onions	Hand planting (15 per cent of acreage)	April
	Hand weeding and thinning	May 15-31 (one-third of acreage)
	Hand hoeing	June-July 15 (two-thirds of acreage)
	Pulling, topping, and sacking	September (one-half of acreage each month)
Potatoes:		
Spring crop (350 acres)	Two hoeings	(January (February
	Digging by hand (25 per cent of acreage)	April-May (one-half of acreage each month)
	Picking up and sacking	April-May (one-half of acreage each month)
Fall crop (1,800 acres)	Two hoeings	(May (June
	Digging by hand (25 per cent of acreage)	Sept.-Oct. (one-half of acreage each month)
	Picking up and sacking	Sept.-Oct. (one-half of acreage each month)
Sugar beets	Thinning	March (60 per cent of acreage)
		April (30 per cent of acreage)
		May (10 per cent of acreage)
	Hoeing (twice)	April (90 per cent of acreage)
		May (90 per cent of acreage)
		June (10 per cent of acreage)

(Table 2 continued on next page.)

Crop	Operation	Time of need
Field crops:		
Sugar beets	Pulling, topping, and loading	Sept. (15 per cent of output) Oct. (60 per cent of output) Nov. (25 per cent of output)
Wheat	(Use of seasonal labor inconsequential and hence ignored.)	
Vegetable crops:		
Anise	Thinning	Aug., Sept., Oct. (one-third of acreage each month)
	Hoeing	Sept., Oct., Nov. (one-third of acreage each month)
	Harvesting	Dec., Jan., Feb. (one-third of acreage each month)
Bell peppers	(Work done by regular crews)	
Broccoli	Pulling and preparing plants for setting in field	Aug.15-31 (3 per cent of acreage)
	Transplanting in field	Sept. (17 per cent of acreage) Oct. (20 per cent of acreage) Nov. (20 per cent of acreage) Dec. (30 per cent of acreage) Jan.1-15(10 per cent of acreage)
	Hoeing (average one per season by seasonal workers)	Sept. (3 per cent of acreage) Oct. (17 per cent of acreage) Nov. (20 per cent of acreage) Dec. (20 per cent of acreage) Jan. (30 per cent of acreage) Feb. (10 per cent of acreage)
	Cutting, trimming, and bunching	Aug. (4 per cent of output) Sept. (9 per cent of output) Oct. (15 per cent of output) Nov. (27 per cent of output) Dec. (24 per cent of output) Jan. (14 per cent of output) Feb. (7 per cent of output)
Cauliflower and cabbage	Pulling and transplanting to field	Aug.15-31(3 per cent of acreage) Sept. (17 per cent of acreage) Oct. (20 per cent of acreage) Nov. (20 per cent of acreage) Dec. (30 per cent of acreage) Jan.1-15(10 per cent of acreage)
	Hoeing (average one per season by seasonal workers)	Sept. (3 per cent of acreage) Oct. (17 per cent of acreage) Nov. (20 per cent of acreage) Dec. (20 per cent of acreage) Jan. (30 per cent of acreage) Feb. (10 per cent of acreage)

Table 2 continued on next page.

Crop	Operation	Time of need
Field crops:		
Sugar beets	Pulling, topping, and loading	Sept. (15 per cent of output)
		Oct. (60 per cent of output)
		Nov. (25 per cent of output)
Wheat	(Use of seasonal labor inconsequential and hence ignored.)	
Vegetable crops:		
Kales	Thinning	Aug., Sept., Oct. (one-third of acreage each month)
	Hoeing	Sept., Oct., Nov. (one-third of acreage each month)
	Harvesting	Dec., Jan., Feb. (one-third of acreage each month)
Bell peppers	(Work done by regular crews)	
Broccoli	Pulling and preparing plants for setting in field	Aug.15-31 (3 per cent of acreage)
		Sept. (17 per cent of acreage)
	Transplanting in field	Oct. (20 per cent of acreage)
		Nov. (20 per cent of acreage)
		Dec. (20 per cent of acreage)
		Jan.1-15(10 per cent of acreage)
	Hoeing (average one per acreage by seasonal workers)	Sept. (3 per cent of acreage)
		Oct. (17 per cent of acreage)
		Nov. (20 per cent of acreage)
		Dec. (20 per cent of acreage)
		Jan. (20 per cent of acreage)
		Feb. (10 per cent of acreage)
	Cutting, trimming, and bunching	Aug. (4 per cent of output)
		Sept. (5 per cent of output)
		Oct. (15 per cent of output)
		Nov. (27 per cent of output)
		Dec. (24 per cent of output)
		Jan. (14 per cent of output)
		Feb. (7 per cent of output)
Cauliflower and cabbage	Pulling and preparing to field	Aug.15-31(3 per cent of acreage)
		Sept. (17 per cent of acreage)
		Oct. (20 per cent of acreage)
		Nov. (20 per cent of acreage)
		Dec. (20 per cent of acreage)
		Jan.1-15(10 per cent of acreage)
	Hoeing (average one per acreage by seasonal workers)	Sept. (3 per cent of acreage)
		Oct. (17 per cent of acreage)
		Nov. (20 per cent of acreage)
		Dec. (20 per cent of acreage)
		Jan. (20 per cent of acreage)
		Feb. (10 per cent of acreage)

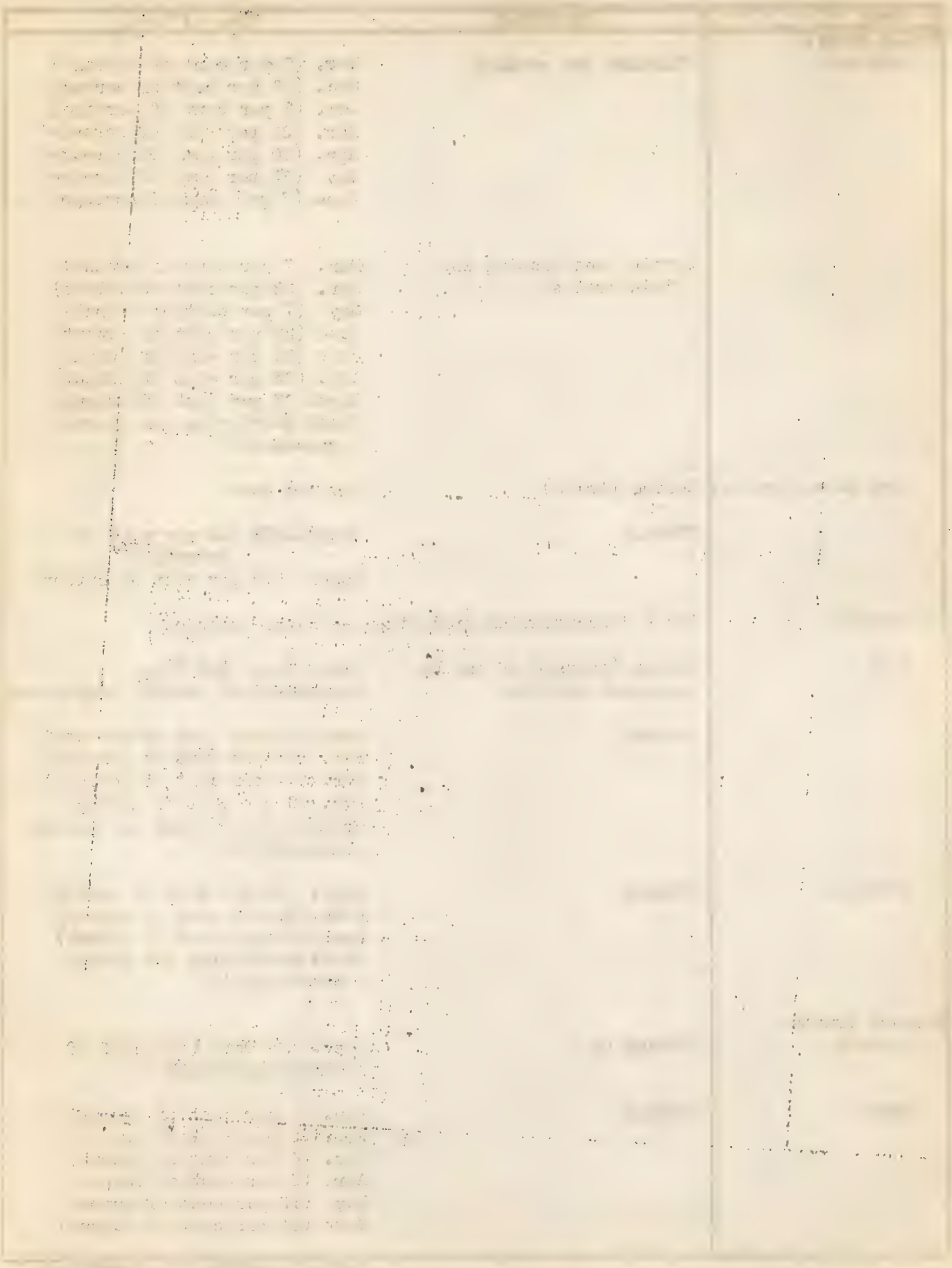
Table 2 continued on next page.

Crop	Operation	Time of need
Field crops:		
Cauliflower and cabbage	Cutting and trimming Packing in crates	Nov. (1 per cent of output) Dec. (6 per cent of output) Jan. (19 per cent of output) Feb. (25 per cent of output) Mar. (22 per cent of output) April (18 per cent of output) May (6 per cent of output) (Rest scattering and inconsequential)
Carrots	Hand hoeing (close to rows) and hand weeding	Aug. (3 per cent of acreage) Sept. (7 per cent of acreage) Oct. (22 per cent of acreage) Nov. (5 per cent of acreage) Dec. (6 per cent of acreage) Jan. (13 per cent of acreage) Feb. (16 per cent of acreage) Mar. (11 per cent of acreage) Apr. (5 per cent of acreage) May (3 per cent of acreage) June (4 per cent of acreage)
	Pulling, bunching, tying, and placing in field crates of four dozen bunches	Jan. (13 per cent of output) Feb. (5 per cent of output) Mar. (6 per cent of output) Apr. (13 per cent of output) May (16 per cent of output) June (11 per cent of output) July (5 per cent of output) Aug. (3 per cent of output) Sept. (4 per cent of output) Oct. (7 per cent of output) Nov. (8 per cent of output) Dec. (9 per cent of output)
Celery	Pulling, stripping, trimming, and placing plants in pans of water; transplanting into field	July 20-31 (10 per cent of acreage) Aug. (80 per cent of acreage) Sept. 1-5 (10 per cent of acreage)
	Harvesting	Nov. (6 per cent of output) Dec. (36 per cent of output) Jan. (23 per cent of output) Feb. (29 per cent of output) Mar. (6 per cent of output)
Endive (chicory)	Thinning and weeding	Aug. (3 per cent of acreage) Sept. (38 per cent of acreage) Oct. (46 per cent of acreage) Nov. (13 per cent of acreage)
	Cutting and placing in field crates	Nov. (3 per cent of output) Dec. (17 per cent of output) Jan. (21 per cent of output) Feb. (46 per cent of output) Mar. (13 per cent of output)

Table 2 continued on next page.

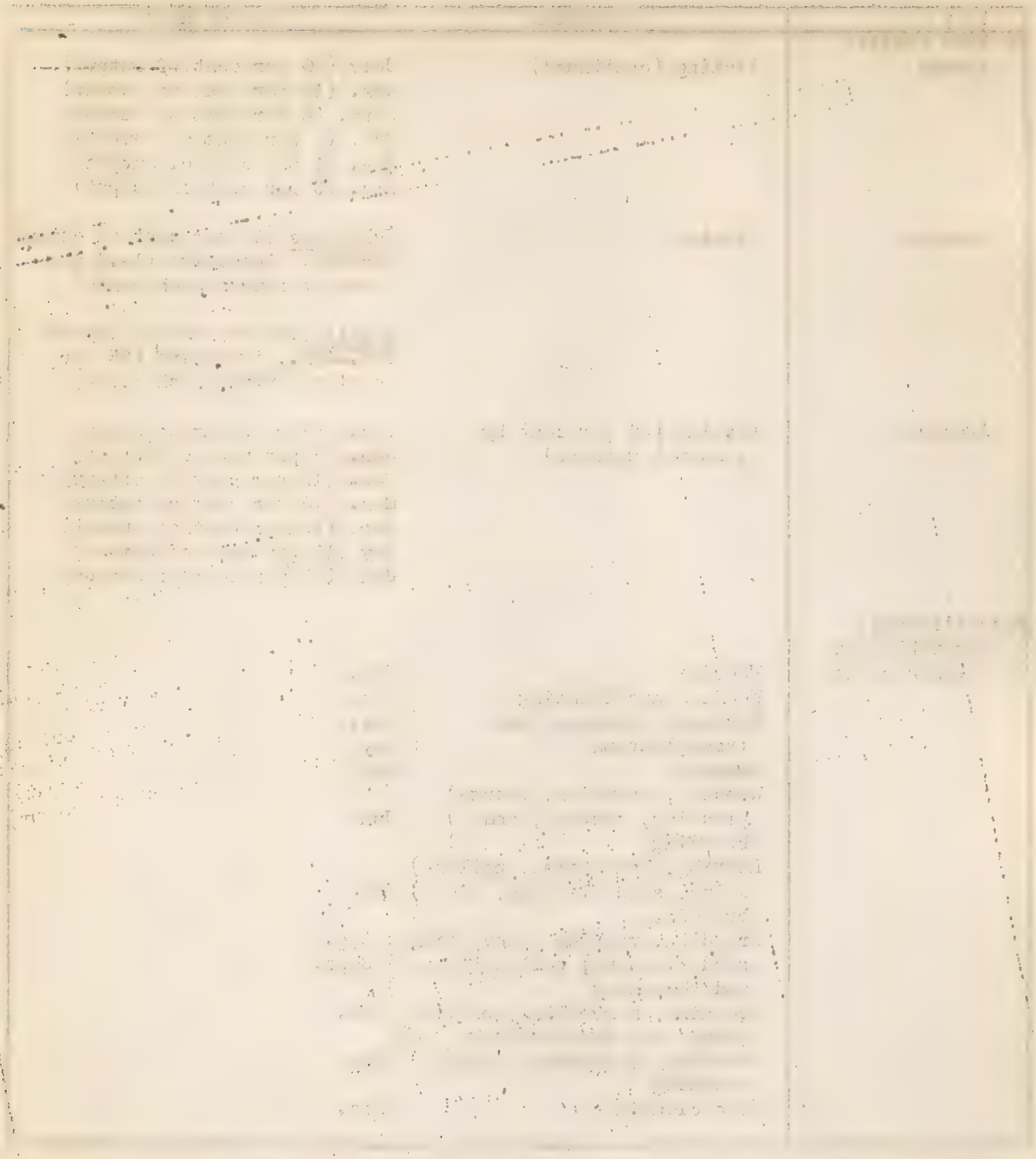
Crop	Operation	Time of need
Field crops:		
Lettuce	Thinning and weeding	Nov. (7 per cent of acreage) Dec. (22 per cent of acreage) Jan. (7 per cent of acreage) Mar. (22 per cent of acreage) Apr. (20 per cent of acreage) May (23 per cent of acreage) June (7 per cent of acreage)
	Cutting and placing in field crates	Mar. (7 per cent of output) Apr. (22 per cent of output) May (7 per cent of output) June (22 per cent of output) July (20 per cent of output) Aug. (23 per cent of output) Sept. (7 per cent of output) (Rest scattering and inconsequential)
Lima beans (green)	Hoeing (twice)	May and June
	Picking	July 20-31 (30 per cent of output) August (70 per cent of output)
Parsley	(Area discontinuing production -- hence ignored.)	
Peas	Hoeing (average of one by seasonal workers)	Oct., Nov., and Dec. (one-third of acreage each month)
	Picking	Jan. (14 per cent of acreage) Feb. (42 per cent of acreage) Mar. (34 per cent of acreage) Apr. (9 per cent of acreage) (Balance scattering and inconsequential)
Tomatoes	Picking	Sept. (24 per cent of output) Oct. (61 per cent of output) Nov. (12 per cent of output) (Rest scattering and inconsequential)
Orchard fruits:		
Walnuts	Picking up	Sept. and Oct. (one-half of output each month
Lemons	Picking	Jan. (2 per cent of output) Feb. (3 per cent of output) Mar. (4 per cent of output) Apr. (8 per cent of output) May (13 per cent of output) June (14 per cent of output)

Table 2 continued on next page.



Crop	Operation	Time of need
Orchard fruits:		
Lemons	Picking (continued)	July (20 per cent of output) Aug. (15 per cent of output) Sept. (6 per cent of output) Oct. (8 per cent of output) Nov. (4 per cent of output) Dec. (3 per cent of output)
Oranges	Picking	Valencias (60 per cent of output) May-Nov., inclusive (14.3 per cent of output each month) Navels (40 per cent of output) Jan.-Apr., inclusive (25 per cent of output each month)
Avocados	Picking (50 per cent by seasonal workers)	Dec., (7 per cent of output) Jan. (8 per cent of output) Feb. (12 per cent of output) Mar. (13 per cent of output) Apr. (19 per cent of output) May (16 per cent of output) June (13 per cent of output)
Miscellaneous:		
Vegetable and flower seeds	Weeding	Feb.
	Weeding and thinning	Mar.
	Weeding, thinning, and transplanting	Apr. May
	Roguing	May
	Weeding, thinning, transplanting, roguing, and breeding	June
	Roguing, harvesting, pollinating, seed cleaning, and breeding	July
	Breeding, roguing, harvesting, seed cleaning, pollinating, and threshing	Aug. Sept.
	Breeding, harvesting, pollinating, and seed cleaning	Oct.
	Breeding, harvesting, seed cleaning	Nov.
	Seed cleaning	Dec.

Findings of Seasonal Labor Needs.-- Details and summaries of seasonal labor requirements of Santa Barbara County agriculture are presented as table 3. The "size of job" are figures drawn from table 1 in terms of either acreage or output in tons, crates, boxes, or whatever unit is commonly used. The "output per man day" is an average figure for the entire acreage or output figured in packed crates, hampers, or boxes (in case of fruits and vegetables). If the work is of a nature that requires a crew different members of which perform different tasks (such as cutting, trimming, loading, and hauling cauliflower; trimming and crating celery, etc.), then the average shown is per man based on the entire crew. Length of day is 9 hours, November to February; 10 hours, March to October, unless otherwise stated. Wide variations in output occur between farm and farm, field and



field, and season and season, because of differences in soil types, climatic conditions, weeds, yields, and other factors influencing the amount of work that a laborer can perform in a given day. Moreover, the basis of output is a mature, experienced male worker, without reference to use of women, children, and more or less inexperienced help that is sometimes used in connection with certain of the tasks requiring use of seasonal workers. The column headed "available days" reflects (a) limitations set from the period within which the work must be performed because of the nature of the task, such as transplanting, thinning, weeding, and cutting, and (b) available days as determined by weather conditions, inclement weather reducing the number of days when a required task can be performed. The "required number of individuals" is given in terms of workers as noted above in connection with "output per man day."

TABLE 3

Seasonal Labor Needs -- Santa Barbara County -- by Months and Tasks

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
January	Anise: Harvesting	20,000 crates	32 crates	625	17	37
	Broccoli, cabbage, and cauliflower:					
	Planting (Jan.1 - 15)	650 acres	23 man-hours per acre	1,661	17	98
	Hoeing	1,425 acres	1 acre	1,425	17	84
	Harvesting broccoli	19,600 crates	90 crates	218	17	13
	Bunching broccoli	(27,200 dozen bunches	(32 dozen per 8-hour day	850	17	50
	Harvesting cabbage and cauliflower	25,000 crates	90 crates	278	17	16
	Packing cabbage and cauliflower	25,000 crates	145 crates	173	17	10
	Carrots: Weeding and hoeing	725 acres	60 man-hours per acre	4,833	17	285
	Harvesting	217,000 5-dozen crates	14 crates per 7-hour day	15,500	17	912
	Celery: Harvesting	121,000 crates	32 crates	3,781	17	223
	Endive (chicory): Harvesting	13,700 crates	22 crates	623	12	52 (for 12 days)
	Lettuce: Thinning and weeding	500 acres	0.5 acre	1,000	17	60
	Peas: Picking	55,000 hampers	9 hampers	6,100	17	360
	Lemons: Picking	11,000 boxes	9 boxes	1,222	17	72
	Navel oranges: Picking	2,700 boxes	18 boxes	150	17	9
	Avocados: Picking	13,000 pounds	600 pounds	22	17	2
	Totals			34,680	17	2,040 man-months
February	Anise: Harvesting	20,000 crates	32 crates	625	21	30
	Spring-crop potatoes: Hoeing	350 acres	3 acres	120	21	6
	Broccoli, cabbage, and cauliflower:					
	Hoeing	650 acres	1 acre	650	21	31
	Harvesting broccoli	9,800 crates	90 crates	109	10	11 (for 10 days)
	Bunching broccoli	19,600 dozen bunches	32 dozen per 8-hour day	612	10	62 (for 10 days)
	Harvesting cabbage and cauliflower	33,000 crates	90 crates	367	21	18
	Packing cabbage and cauliflower	33,000 crates	145 crates	228	21	11

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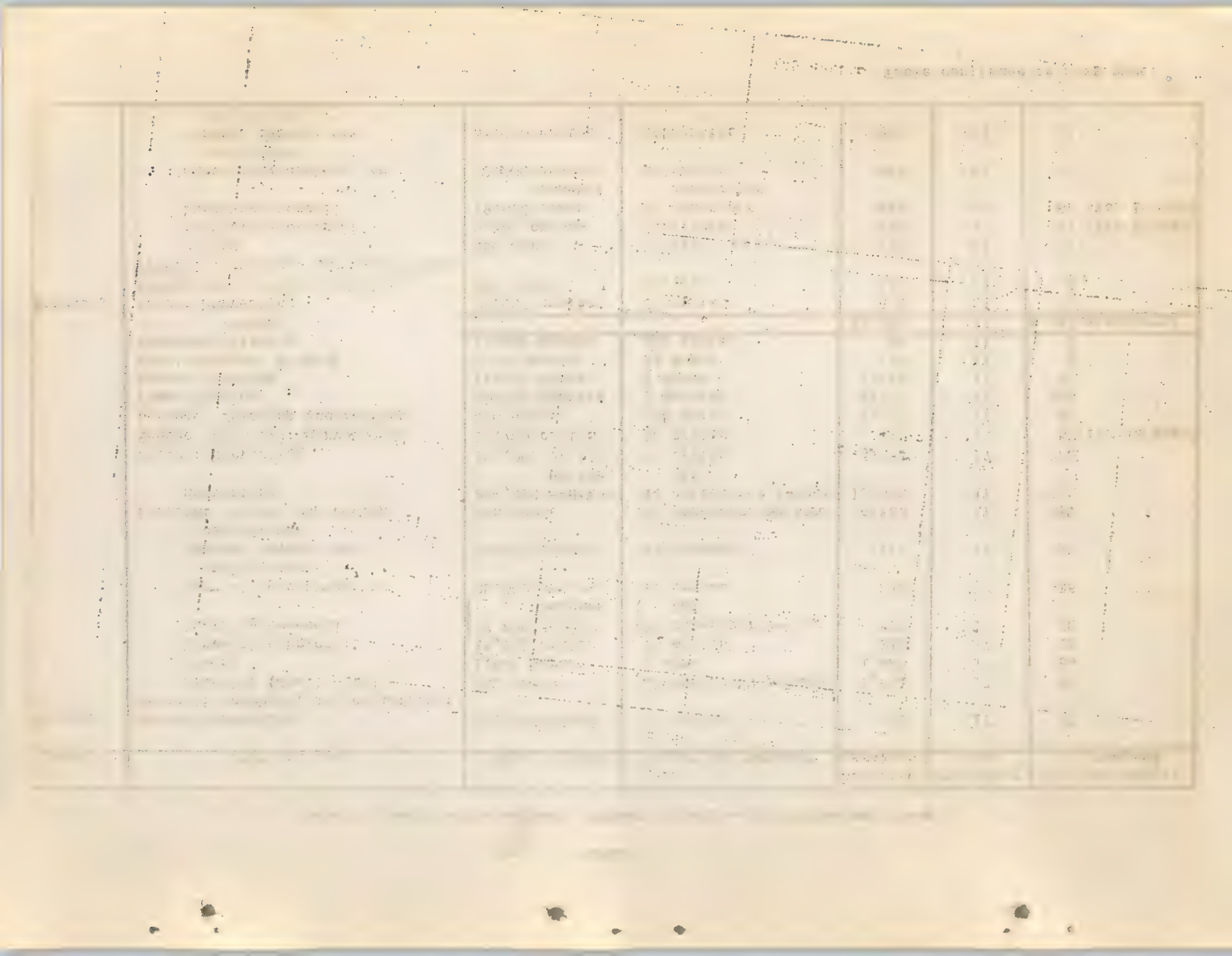

Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
February (cont'd.)	Carrots: Weeding and hoeing	900 acres	60 man-hours per acre	6,000	21	286
	Harvesting	84,000 crates	14 crates per 7-hour day	6,000	21	286
	Celery: Harvesting	153,000 crates	32 crates	4,781	21	227
	Endive (chicory): Harvesting	30,000 crates	22 crates	1,364	21	65
	Peas: Picking	167,000 hampers	9 hampers	18,334	21	873
	Lemons: Picking	15,000 boxes	9 boxes	1,667	21	80
	Navel oranges: Picking	2,700 boxes	18 boxes	150	21	7
	Avocados: Picking	18,000 pounds	600 pounds	30	21	2
	Seed crops: Weeding	1,780 acres	--	840	21	40
	Totals			31,096	21	1,481 man-months
March	Sugar beets: Thinning	4,200 acres	0.5 acre	8,400	20	420
	Cabbage and cauliflower:					
	Harvesting	29,000 crates	90 crates	322	20	16
	Packing	29,000 crates	160 crates	181	20	9
	Carrots: Weeding and hoeing	6,100 acres	60 man-hours per acre	4,067	20	203
	Harvesting	100,000 crates	14 crates per 7-hour day	7,143	20	357
	Celery: Harvesting	31,500 crates	32 crates	984	20	49
	Endive (chicory): Harvesting	8,500 crates	22 crates	390	10	39(for 10 days)
	Lettuce: Thinning and weeding	1,600 acres	0.5 acre	3,200	20	160
	Harvesting	58,000 crates	25 crates	2,300	20	116
	Dry-packing	52,000 crates	20 crates	2,600	20	130(half time)
	Peas: Picking	135,000 hampers	10 hampers	13,500	20	675
	Lemons, Picking	22,000 boxes	10 boxes	2,200	20	110
	Navel oranges: Picking	2,700 boxes	20 boxes	135	20	7
	Avocados: Picking	20,000 pounds	600 pounds	34	20	2
	Seed crops:					
	Weeding and thinning	1,780 acres	--	1,300	20	65
	Totals			45,772	20	2,289 man-months
April	Onion seed: Hand planting	40 acres	3 acres	14	7	2(for 7 days)
	Spring-crop potatoes:					
	Hand digging	40 acres	0.25 acre	160	10	16(for 10 days)
	(12.5 per cent of acreage)					
	Picking up and sacking	1,750 tons	2.5 tons	700	15	47(for 15 days)
	Sugar beets: Thinning	2,100 acres	0.5 acre	4,200	22	191

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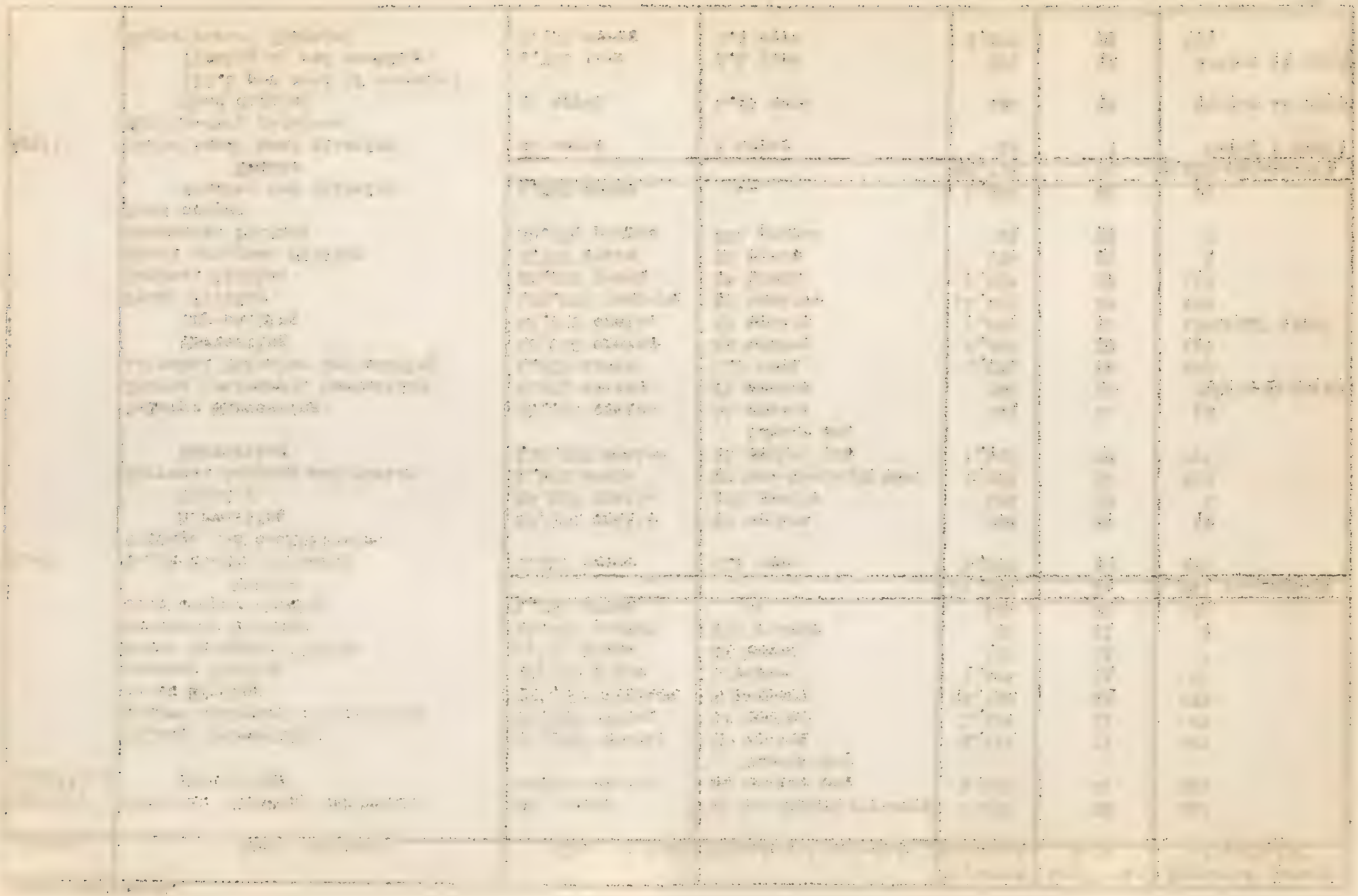

Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
April (cont'd.)	Cabbage and cauliflower:					
	Harvesting	24,000 crates	100 crates	240	22	11
	Packing	24,000 crates	160 crates	150	22	7
	Carrots: Weeding and hoeing	280 acres	60 man-hours per acre	1,680	22	77
	Harvesting	217,000 crates	18 crates	12,059	22	548
	Lettuce: Thinning and weeding	140 acres	0.5 acre	280	8	35(for 8 days)
	Harvesting	183,000 crates	25 crates	7,312	22	362
	Dry-packing	165,000 crates	20 crates	8,250	22	413 (half time)
	Peas: Picking	36,000 hampers	10 hampers	3,600	22	155
	Lemons: Picking	44,000 boxes	10 boxes	4,400	22	200
	Navel oranges: Picking	2,700 boxes	20 boxes	135	22	6
	Avocados: Picking	29,000 pounds	600 pounds	48	22	2
	Seed crops: Weeding, thinning, and transplanting	1,780 acres	--	3,080	22	140
	Totals			46,308	22	2,105 man-months
May	Onions: Hand weeding and thinning	80 acres	70 man-hours per acre	560	12	45(for 12 days)
	Spring-crop potatoes:					
	Hand digging (12½ per cent of acreage)	40 acres	0.25 acre	160	10	16(for 10 days)
	Picking up and sacking	1,750 acres	2.5 tons	700	15	47(for 15 days)
	Fall-crop potatoes: Hoeing	1,300 acres	3 acres	433	25	18
	Sugar beets: Thinning	700 acres	0.5 acre	1,400	25	56
	Hoeing	4,200 acres	2 acres	2,100	25	84
	Cabbage and cauliflower:					
	Harvesting	8,000 crates	100 crates	80	10	3(for 10 days)
	Packing	8,000 crates	160 crates	50	10	5(for 10 days)
	Carrots: Weeding and hoeing	170 acres	60 man-hours per acre	1,020	25	41
	Harvesting	238,000 crates	14 crates per 7-hour day	17,000	25	680
	Lettuce: Thinning and weeding	1,650 acres	0.5 acre	3,300	25	132
	Harvesting	58,000 crates	25 crates	2,320	25	93
	Dry-packing	52,000 crates	20 crates	2,600	25	220 (half time)

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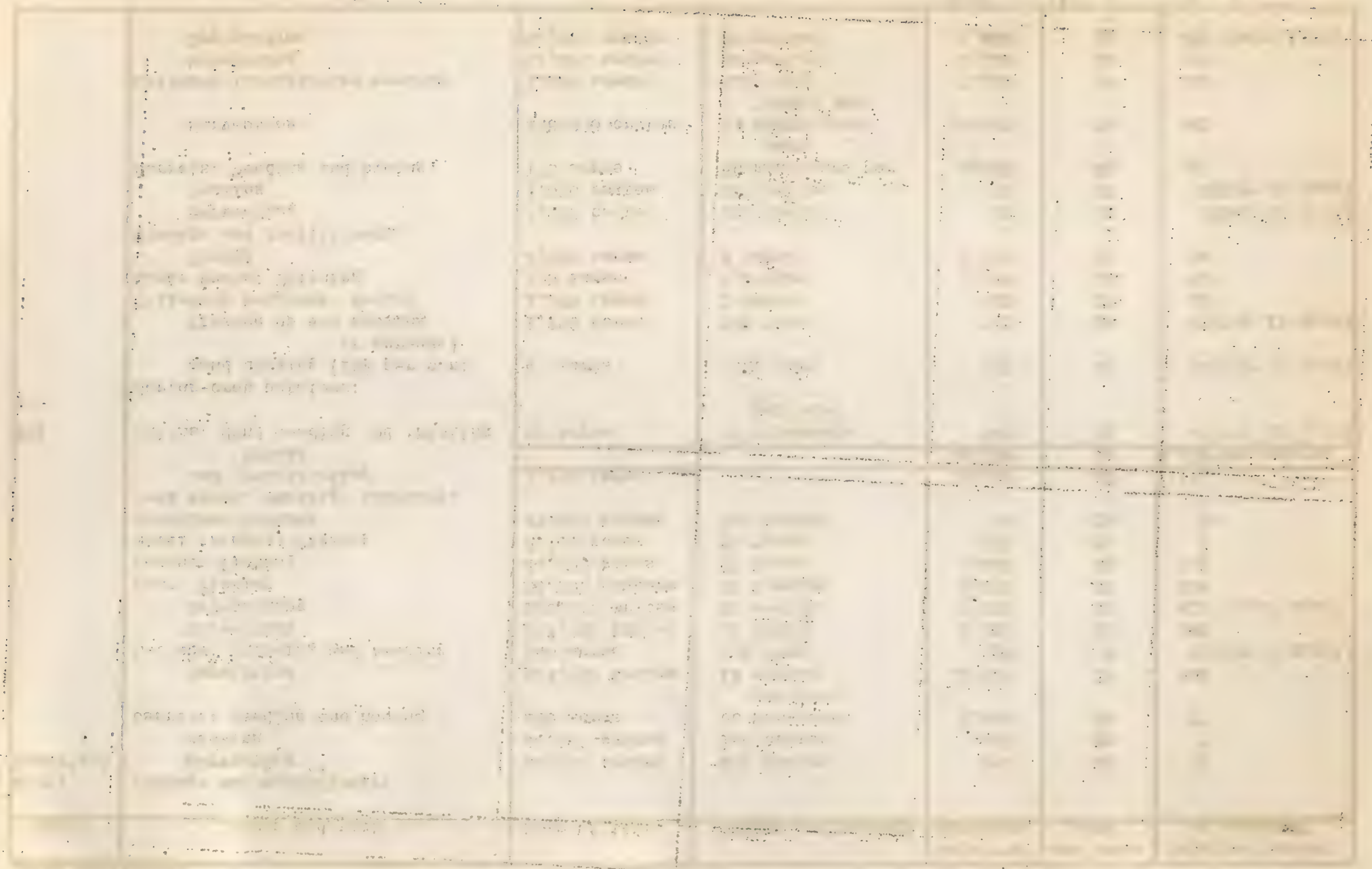

Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
May (cont'd.)	Lima beans (for green crop): Hoeing	330 acres	5 acres	66	10	7(for 10 days)
	Lemons: Picking	70,000 boxes	10 boxes	7,000	25	280
	Valencia oranges: Picking	2,400 boxes	20 boxes	120	25	5
	Avocados: Picking	24,000 pounds	600 pounds	40	25	2
	Seed crops: Weeding, thinning, transplanting, and roguing	1,780 acres	--	4,250	25	170
	Totals			43,199	25	1,728 man-months
June	Onions: Hand weeding and thinning	165 acres	70 man-hours per acre	1,155	12	96(for 12 days)
	Hoeing	245 acres	2 acres	123	12	10(for 12 days)
	Fall-crop potatoes: Hoeing	1,300 acres	3 acres	433	24	18
	Sugar beets: Hoeing	6,300 acres	3 acres	2,100	24	87
	Carrots: Weeding and hoeing	225 acres	60 man-hours per acre	1,350	24	57
	Harvesting	185,000 crates	14 crates per 7-hour day	13,215	24	551
	Lettuce: Thinning and weeding	500 acres	0.5 acre	1,000	24	42
	Harvesting	183,000 crates	25 crates	7,320	24	305
	Dry-packing	165,000 crates	20 crates	8,250	24	688(half time)
	Lima beans (for sale green): Hoeing	220 acres	5 acres	44	10	5(for 10 days)
	Lemons:Picking	75,000 boxes	10 boxes	7,500	24	313
	Valencia oranges: Picking	2,400 boxes	20 boxes	120	24	5
	Avocados: Picking	20,000 pounds	600 pounds	34	24	2
	Seed Crops: Weeding, thinning, transplanting, roguing, pollinating, breeding	1,780 acres	--	3,000	24	125
	Totals			45,644	24	1,902 man-months
July	Onions: Hoeing	245 acres	2 acres	123	26	5
	Sugar beets: Hoeing	2,800 acres	3 acres	933	26	36
	Carrots: Harvesting	84,000 crates	14 crates per 7-hour day	6,000	26	223
	Celery: Planting	90 acres	16 man-days per acre	1,440	10	144(for 10 days)
	Lettuce: Harvesting	16,500 crates	25 crates	660	10	66(for 10 days)
	Dry-packing	14,000 crates	20 crates	700	10	70(for 10 days)

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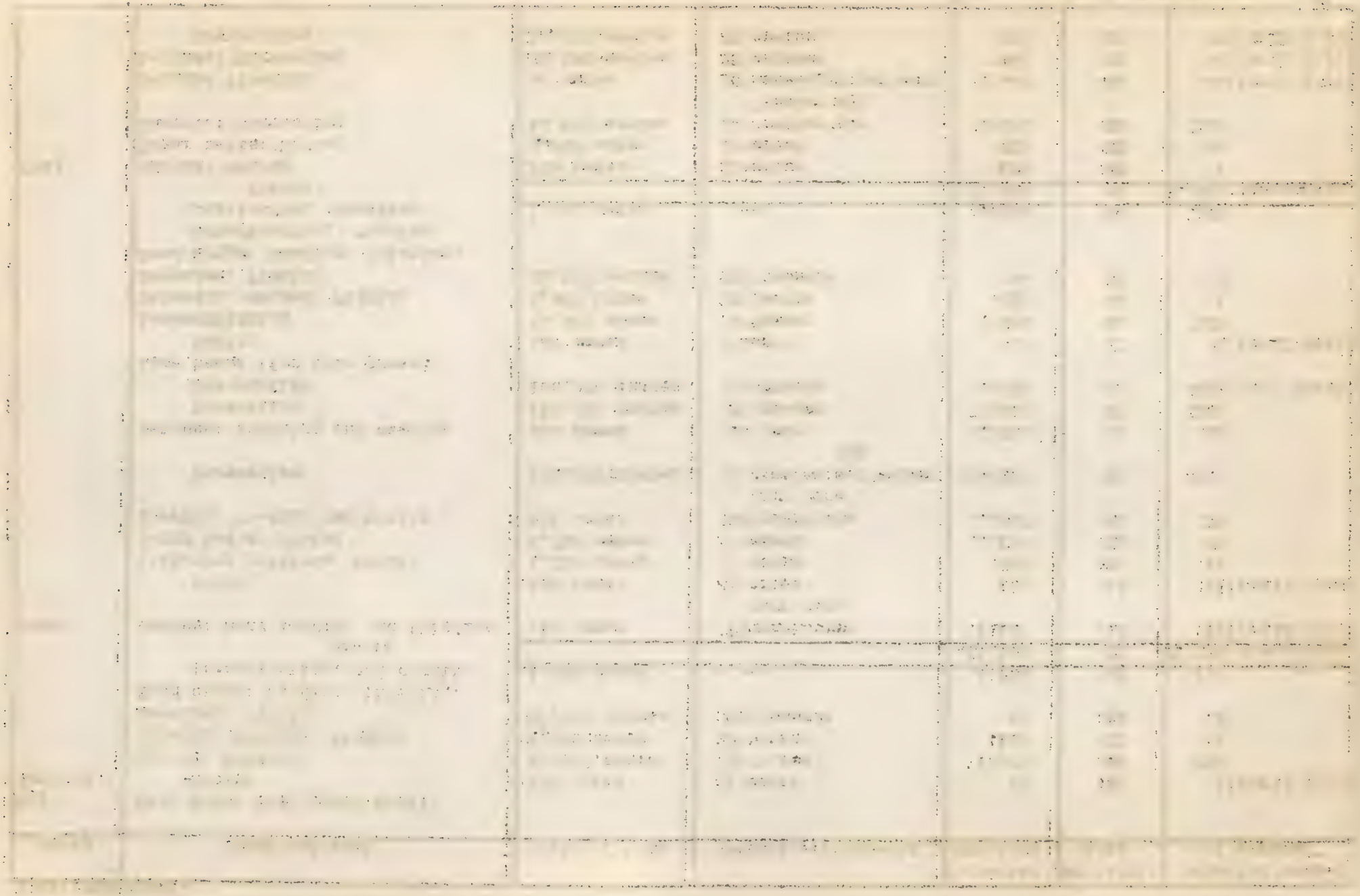

Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
July (cont'd.)	Lima beans (for green crop): Hoeing	110 acres	5 acres	22	7	3(for 7 days)
	Lemons: Picking	110,000 boxes	10 boxes	1,100	26	43
	Valencia oranges: Picking	2,400 boxes	20 boxes	120	26	5
	Seed crops: Weeding, thinning, transplanting, roguing, pollinating, and breeding	1,780 acres	--	4,420	26	170
	Totals			15,518	26	597 man-months
August	Anise: Thinning	50 acres	0.25 acre	200	5	40(for 5 days)
	Broccoli, cabbage, and cauliflower: Planting	150 acres	23 man-hours per acre	345	8	43(for 8 days)
	Harvesting broccoli	5,600 crates	100 crates	56	6	10(for 6 days)
	Bunching broccoli	11,200 dozen bunches	40 dozen	230	6	38(for 6 days)
	Carrots: Weeding and hoeing	165 acres	60 man-hours per acre	990	26	35
	Harvesting	50,000 crates	14 crates per 7-hour day	3,426	26	132
	Celery: Planting	700 acres	16 man-days per acre	10,144	26	423
	Endive (chicory): Thinning and weeding	10 acres	0.5 acre	20	5	4(for 5 days)
	Lettuce: Harvesting	191,000 crates	25 crates	7,640	26	294
	Dry-packing	170,000 crates	20 crates	8,500	26	326 (half time)
	Lemons: Picking	82,000 boxes	10 boxes	8,200	26	316
	Valencia oranges: Picking	2,400 boxes	20 boxes	120	26	5
	Seed crops: Breeding, roguing, harvesting, seed-cleaning, pollinating, and threshing	1,780 acres	--	5,330	26	205
	Totals			45,201	26	1,739 man-months
September	Onions: Pulling, topping, and sacking	16,000 cwt.	2 cwt.	8,000	25	320
	Fall-crop potatoes: Digging (by hand)(160 acres)	160 acres	0.25 acre	640	25	26
	Picking up and sacking	6,500 tons	2.5 tons	2,600	25	104

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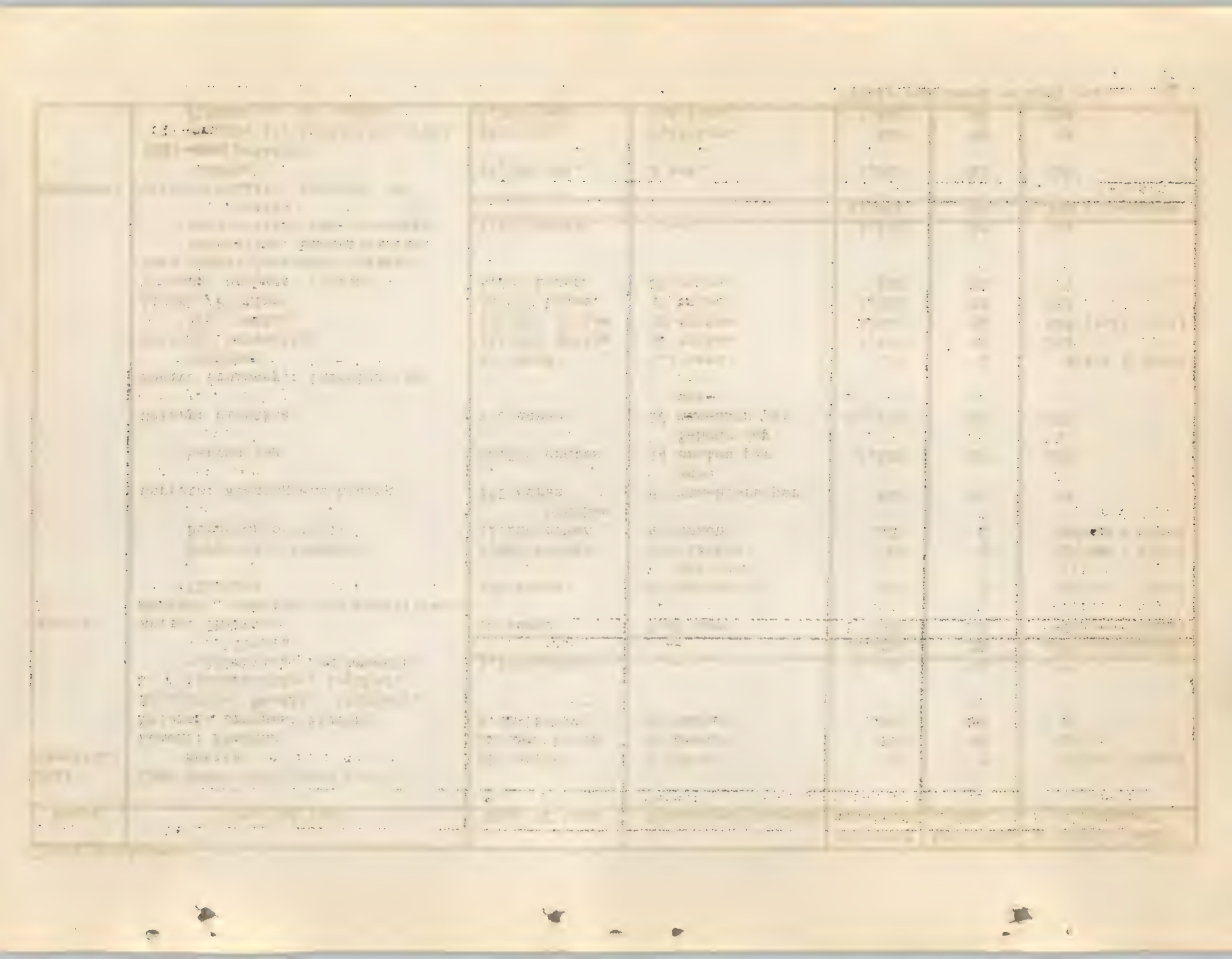

Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
September (cont'd.)	Sugar beets					
	Pulling, topping, and loading	12,000 tons	6 tons	2,000	25	80
	Anise: Thinning	50 acres	0.25 acre	200	5	40(for 5 days)
	Hoeing	50 acres	1 acre	50	10	5(for 10 days)
	Broccoli, cabbage, and cauliflower:					
	Planting	800 acres	23 man-hours per acre	1,840	25	74
	Hoeing	150 acres	1 acre	150	15	10(for 15 days)
	Harvesting broccoli	12,600 crates	100 crates	126	15	9(for 15 days)
	Bunching broccoli	25,200 dozen	40 dozen	630	15	42(for 15 days)
	Carrots: Weeding and hoeing	400 acres	6 man-days	2,400	25	96
	Harvesting	67,000 crates	14 crates per 7-hour day	4,786	25	152
	Celery: Planting	90 crates	16 man-days	1,440	5	288(for 5 days)
	Endive (chicory): Thinning and weeding	100 acres	0.5 acre	200	5	20(for 5 days)
	Lettuce: Harvesting	58,000 crates	25 crates	2,320	25	93
	Dry-packing	52,000 crates	20 crates	2,600	25	220 (half time)
	Lima beans: Picking	600 tons	400 pounds	3,000	25	120
	Tomatoes: Picking	100,000 crates	40 crates	2,500	25	100
	Walnuts: Picking up	912 tons	200 pounds	9,120	25	365
	Lemons: Picking	30,000 boxes	10 boxes	3,000	25	120
	Valencia oranges: Picking	2,400 boxes	20 boxes	120	25	5
	Seed crops: Breeding, roguing, harvesting, seed-cleaning, pollinating, and threshing	1,780 acres	--	5,750	25	230
	Totals			53,472	25	2,131 man-months
October	Onions: Pulling, topping, and sacking	16,000 cwt.	20 cwt.	8,000	24	334
	Fall-crop potatoes:					
	Digging (by hand)(160 acres)	160 acres	0.25 acre	640	24	27
	Picking up and sacking	6,500 tons	2.5 tons	2,600	24	108
	Sugar beets: Pulling, topping, and loading	45,000 tons	6 tons	7,500	24	313
	Anise: Thinning	50 acres	0.25 acre	200	5	40(for 5 days)
	Hoeing	50 acres	1 acre	50	10	5(for 10 days)

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Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
October (cont'd.)	Broccoli, cabbage, and cauliflower:					
	Planting	950 acres	23 man-hours	2,185	24	93
	Hoeing broccoli	800 acres	1 acre	800	24	34
	Harvesting broccoli	21,000 crates	100 crates	210	5	42(for 5 days)
	Bunching broccoli	42,000 dozen	40 dozen	1,050	5	210(for 5 days)
	Carrots: Weeding and hoeing	1,225 acres	6 man-days	7,350	24	307
	Harvesting	117,000 crates	14 crates per 7-hour day	8,358	24	347
	Endive (chicory): Thinning and weeding	120 acres	0.5 acre	240	24	10
	Peas: Hoeing	1,500 acres	1 acre	1,500	24	61
	Tomatoes: Picking	246,000 crates	40 crates	6,200	24	259
	Walnuts: Picking up	912 tons	200 pounds	9,120	24	380
	Lemons: Picking	44,000 boxes	10 boxes	4,400	24	183
	Valencia oranges: Picking	2,400 boxes	20 boxes	120	24	5
	Seed crops: Breeding, harvesting, pollinating, and seed-cleaning	1,780 acres	--	4,200	24	175
	Totals			64,723	24	2,699 man-months
November	Sugar beets: Pulling, topping, and loading	19,000 tons	6 tons	3,167	22	144
	Anise: Hoeing	50 acres	1 acre	50	10	5(for 10 days)
	Broccoli, cabbage and cauliflower:					
	Planting	950 acres	23 man-hours	2,185	22	100
	Hoeing	950 acres	1 acre	950	22	44
	Harvesting broccoli	37,800 crates	90 crates	420	22	19
	Bunching broccoli	75,600 dozen	36 dozen	2,100	22	96
	Harvesting cabbage and cauliflower	1,300 crates	90 crates	15	2	8(for 2 days)
	Packing cabbage and cauliflower	1,300 crates	145 crates	9	2	5(for 2 days)
	Carrots: Weeding and hoeing	280 acres	6 man-days	1,680	22	77
	Harvesting	134,000 crates	14 crates per 7-hour day	9,572	22	455
	Celery: Harvesting	31,500 crates	32 crates	984	22	45
	Endive (chicory): Thinning and weeding	35 acres	0.5 acre	70	5	14(for 5 days)
	Harvesting	2,000 crates	22 crates	92	4	23(for 4 days)

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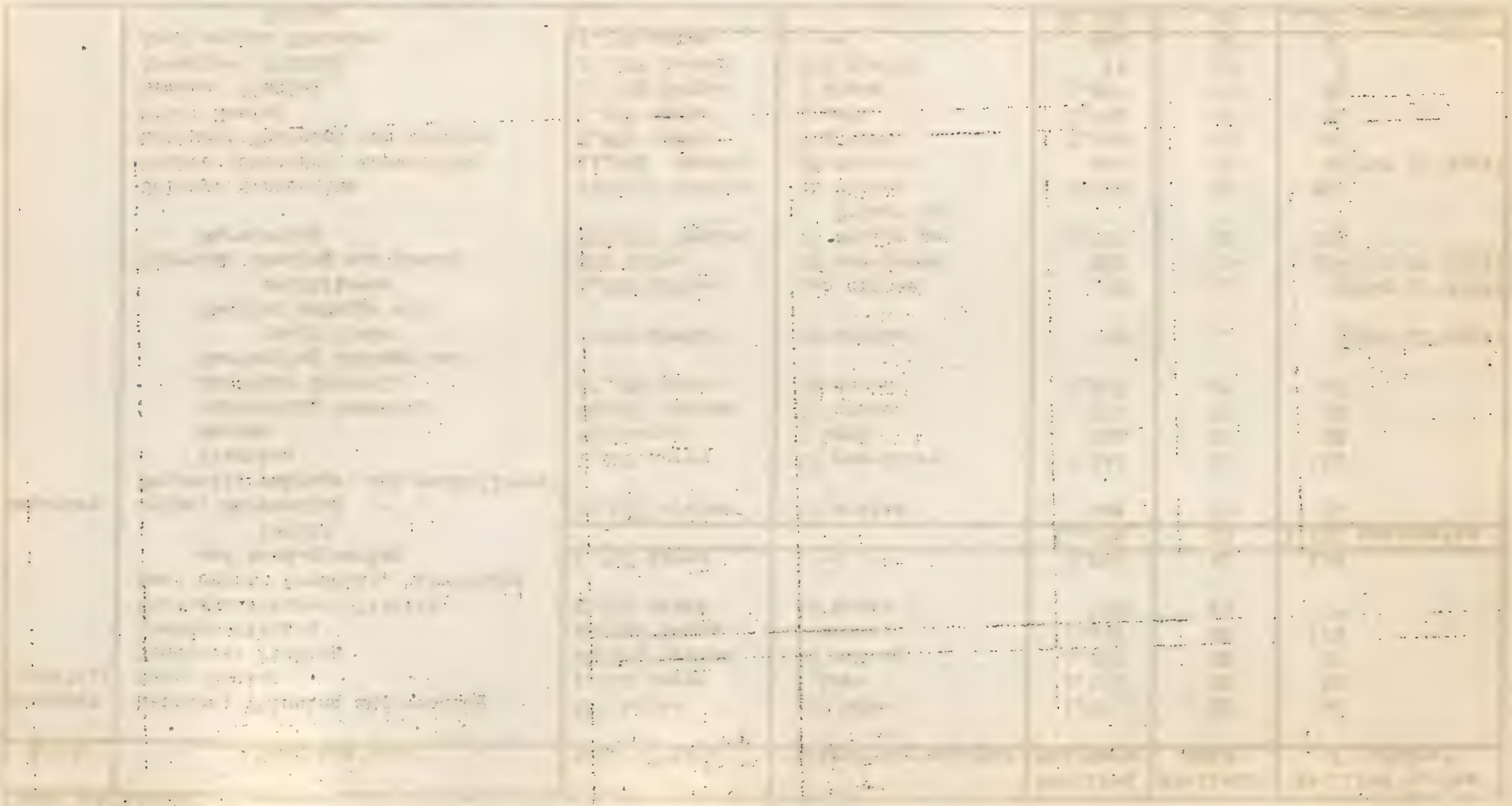
Table continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
November (cont'd.)	Lettuce: Thinning and weeding	500 acres	0.5 acre	1,000	22	46
	Peas: Hoeing	1,500 acres	1 acre	1,500	22	68
	Tomatoes: Picking	50,000 crates	40 crates	1,250	22	57
	Lemons: Picking	22,000 boxes	9 boxes	2,445	22	112
	Valencia oranges: Picking	2,400 boxes	18 boxes	150	22	7
	Seed crops: Breeding, harvesting, and seed-cleaning	1,780 acres	--	3,850	22	175
	Totals			31,489	22	1,431 man-months
December	Anise: Harvesting	20,000 crates	32 crates	625	20	31
	Broccoli, cabbage, and cauliflower:					
	Planting	1,425 acres	23 man-hours	3,642	20	182
	Hoeing	950 acres	1 acre	950	20	48
	Harvesting broccoli	33,600 crates	90 crates	374	20	18
	Bunching broccoli	67,200 dozen	36 dozen	1,867	20	93
	Harvesting cabbage and cauliflower	8,000 crates	90 crates	89	10	9(for 10 days)
	Packing cabbage and cauliflower	8,000 crates	145 crates	55	10	6(for 10 days)
	Carrots: Weeding and hoeing	335 acres	23 man-hours	856	15	514(for 15 days)
	Harvesting	150,000 crates	14 crates per 7-hour day	10,715	20	536
	Celery: Harvesting	190,000 crates	32 crates	5,938	20	297
	Endive (chicory): Harvesting	11,000 crates	22 crates	500	10	50(for 10 days)
	Lettuce: Thinning and weeding	1,600 acres	0.5 acre	3,200	20	160
	Peas: Hoeing	1,500 acres	1 acre	1,500	20	75
	Lemons: Picking	15,000 boxes	9 boxes	1,667	20	83
	Avocados: Picking	10,000 pounds	600 pounds	17	20	1
	Seed crops: Cleaning	1,780 acres	--	400	20	20
	Totals			26,457	20	1,323 man-months

* Monthly basis unless otherwise noted.



Notes

Notes on Table 1.-- Acreage figures appearing in table 1 are from the January 1, 1936 "Agricultural Crop Report of Santa Barbara County," by Eugene S. Kellogg. This report is likewise the basis for most of the production shown in this table. In some instances the figures were determined on the basis of reported yields per acre. Production reported as carlots was recalculated to a crate, hamper, or packed lug basis.

Notes on Table 2.-- Data concerning "time of need," as shown in this table breaks down required hand labor utilizing seasonal labor into the period when the work is performed, in order to permit a subsequent determination of labor needs by months (table 3). Some operations are performed to only a limited extent with seasonal hand labor. For instance, hand planting of onions is estimated to be practiced to the extent of but 15 per cent of the planted acreage, the balance being seeded with horse-drawn equipment. Likewise about 25 per cent of the potato acreage, of both spring and fall crops, is dug by hand, the balance being dug with machines. When the part-acreage tasks involve two or more months, then the proportionate acreage for each month is shown. For example, hand digging of the 25 per cent of spring-crop potatoes occurs in April and May, so that half of the total job was assigned to each month.

The amount of work done each month is based on the cropping program followed during 1935. The allotting of amounts of work is based on findings concerning local farming practices and required time to "make" a crop, resulting from inquiry of producers and records of carlot shipments, the latter proving helpful in fixing dates of planting and of subsequent tasks involved in producing a given crop. Proportionate amounts of output harvested each month were determined from data of local practices with respect to harvesting and from carlot shipments of perishable products and of lemons.

Notes on Table 3.-- Table 3 is the condensed summary of labor needs as worked out for Santa Barbara County as a result of findings pertinent to 1935. The data are presented by months with the tasks which were performed in each month indicated by both crop and task. The size of the job was calculated from the data appearing in table 1 (acreage and production) and table 2 (task, time of performance, and percentage of work pertinent to a given month). The output per man day was calculated as indicated in the foreword presenting table 3. The number of required man-days is a result of dividing the size of task by output per man day. The available days for the different task involves two variables. The first is the number of days when field work is possible because of favorable weather conditions. The basis for this column was determined from a study of the monthly weather charts of the United States Weather Bureau for the years 1933, 1934, and 1935. These data indicated available days per month as follows (based on a 26-day working month without allowance for holidays):

Month	Available days	Length of work day	Month	Available days	Length of work day
		hours			hours
January	17	9	July	26	10
February	21	9	August	26	10
March	20	10	September	25	10
April	22	10	October	24	10
May	25	10	November	22	9
June	24	10	December	20	9

The second factor influencing the number of available days was the size of the job. If the output was for but a few cars, then the number of days was limited to efficient work of getting out these cars within a specified limited time. If a field operation had to be performed in a period less than the number of available days during the month, then the specific number of days was noted. These restrictions are shown in parentheses. For example, in April hand planting of onion seed was limited to 7 days of the number available during the month, planting celery in September to 5 days, harvesting cabbage and cauliflower to 4 days in November, etc.

The totals of table 3 show the total required man-days of needed seasonal labor, the available days for field work during the month, and the necessary number of men (as defined in the opening paragraph of table 3) required on a monthly basis to care for the tasks ordinarily performed by occasional or seasonal workers.

In an area such as Santa Barbara County, involving a substantial acreage of truck crops, the findings as set forth in this report are bound to fluctuate materially from year to year, because of the influence of market outlook upon what and how much acreage is planted and when it is planted, because of variable seasonal conditions affecting yields, times of performing operations, and available days, and because of harvesting operations being timed to provide products for shipment when the outlook appears favorable so that during any one month marked variations in need for harvest labor result from cycles of speeding up shipments and from slacking off.

Miscellaneous Notes

Containers (kind, size, contents, net weight, number per car.-- The basis used for converting carlots and market packages to production is shown as table 4. Size is given as outside dimensions, in order of length, width, and depth, by inches, unless otherwise noted. Net weight is in pounds.

TABLE 4

Data Concerning Containers and Carlots

Product	Containers				Packages per car
	Kind	Size	Contents	Net weight	
Anise and Celery	Crate	24x20 3/8x24	3½, 4, or 5 dozen	50-60	320
Cauliflower and Cabbage	Crate	21 5/8x18x13	8 - 15 heads	42	288
Carrots	Crate	21 5/8x18x13	4 - 6 dozen	50-60	348
Endive and Lettuce	Crate	20½x17½x13	4 - 6 dozen	60 (Dry-packed)	320
Lima beans (green)	Crate	19½x16x18	--	35	640
Peas	Hamper	--	--	30	650
Tomatoes	Los Angeles lug	16 1/8x13½x5 3/4	--	32	650
Lemons	Box	25 5/8x13x10	300 - 588	78	348
Oranges	Box	25 5/8x11½x11½	126 - 360	76	
Avocados	Picking boxes*	23x17¼x7 3/4	--	40	

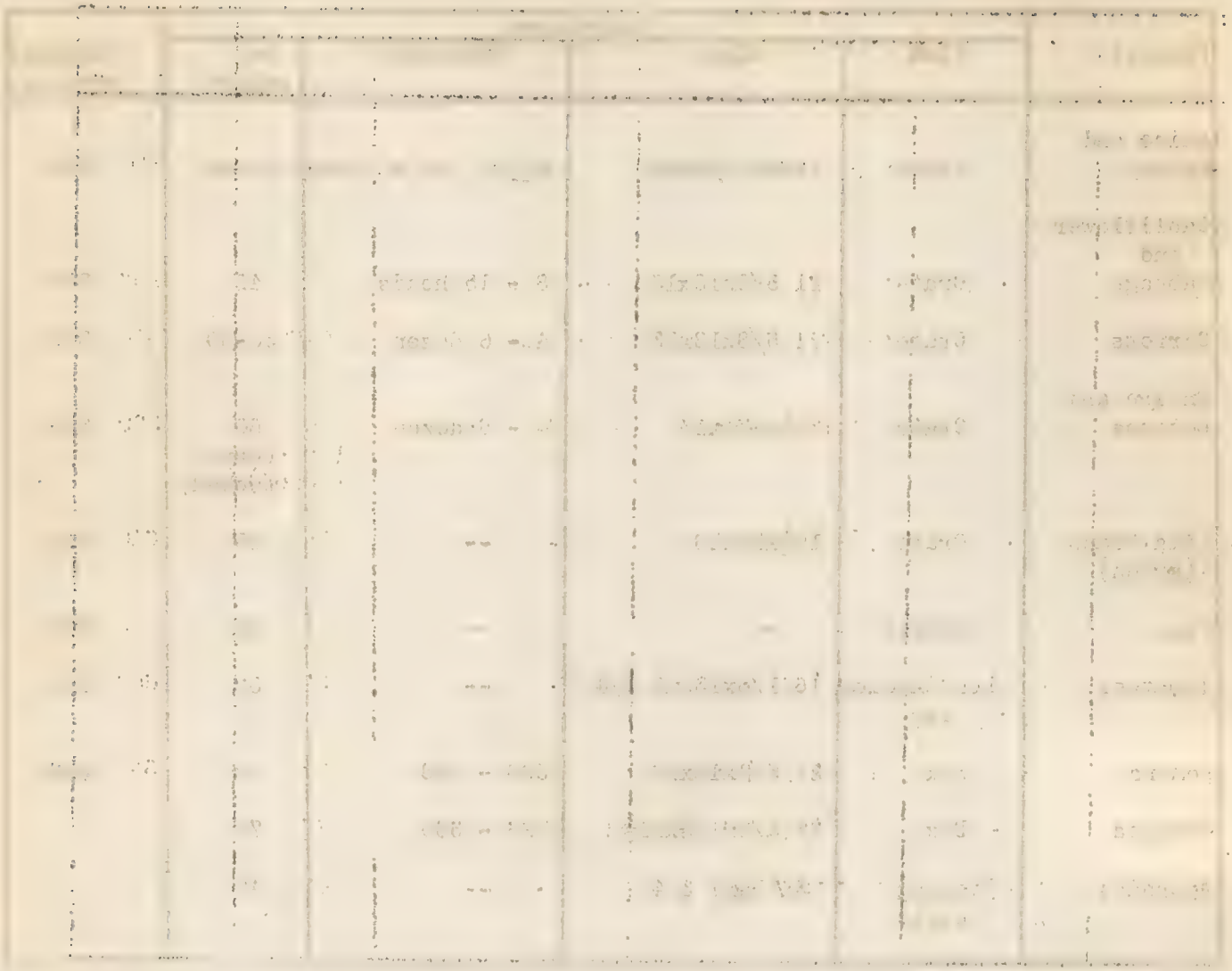
* As delivered to packing house.

Anise.-- Anise, grown for its roots (shipped mostly to New York Italians for use as salad and for making anisette wine). Produced similarly to celery. Can be planted at any time of the year, making a crop in 3½ to 5 months after planting (depending upon temperatures prevailing during the growing season).

Broccoli.-- Fields of broccoli are cut over from fifteen to twenty-two times. The first five cuttings normally produce heads, the next two cuttings about an equal quantity of heads and sprouts, the last ten to fifteen cuttings, sprouts. The plants yield over a period of 2 to 3 months in sandy soils and 3 to 5 months in loam soils. Cutting takes place every 6 to 7 days during the early part of the harvesting season, lengthening to 7 to 10 days as the season continues.

Bunchers can assemble about eight dozen bunches made up of heads per hour and about three dozen of sprouts. Heads constitute about 25 per cent of the total, thus making an average bunching rate of about four dozen per hour for the season.

Carrots.-- Not thinned but given a very careful weeding, picking every weed out by hand, and close hand hoeing.



Harvesting is governed by the demands of the sheds and averages about 7 hours a day.

Cauliflower and Cabbage.-- These crops are packed in the field. The average rate of packing is about twenty crates per man per hour, plus the use of an additional 25 per cent of labor for lidding, making a general average per man day of 145 crates during the months of November to February inclusive and 160 crates per day for the other months.

Celery.-- Pulling, trimming, and placing seedlings in pans of water pending field setting requires 130 man hours per acre (936,000 plants). Planting is done on listed beds, each bed containing two rows of celery 14 inches apart and 7 inches between plants.

Pulling and trimming celery for yield as given (namely, 600 five dozen crates per acre), including placing in field crates for transporting to the packing sheds is at an average rate of thirty-two crates per 9-hour man day.

Lettuce.-- The difference in the number of crates of lettuce reported as harvested and as dry-packed is due to the fact that about 10 per cent of the harvest is packed in the sheds for eastern shipment, the balance being packed in the field for trucking to local markets. No data of the amount sent to the sheds were found, so that an arbitrary allocation of 10 per cent monthly was made in calculating the table (#3).

Dry-packing of lettuce is confined to an average of but 5 hours per day (because of weather limitations), resulting in an average output of twenty packed crates per man day of 5 hours. Thus the required number of men are profitably employed but half-time so far as this particular job is concerned.

Lemons and Oranges.-- Rate of output is reported as packed boxes. In general three field boxes make two packed boxes.

Avocados.-- Figured on basis of 50 per cent harvested by seasonal labor.

Reported by:

R. L. Adams
College of Agriculture
University of California
Berkeley, California

Assisted by:

January 17, 1936.

Harvesting is governed by the demands of the shade and averages about 7 hours a day.

Cauliflower and Cabbage.-- These crops are packed in the field. The average rate of packing is about twenty crates per man per hour, plus the use of an additional 25 per cent of labor for lidding, making a general average per man day of 146 crates during the months of November to February inclusive and 160 crates per day for the other months.

Celery.-- Pulling, trimming, and placing seedlings in pans of water pending field setting requires 130 man hours per acre (836,000 plants). Planting is done on lifted beds, each bed containing two rows of celery 14 inches apart and 7 inches between plants.

Pulling and trimming celery for yield as given (namely, 800 five dozen crates per acre), including placing in field crates for transporting to the packing shade is at an average rate of thirty-two crates per 9-hour man day.

Lettuce.-- The difference in the number of crates of lettuce reported harvested and as dry-packed is due to the fact that about 10 per cent of the leaves is packed in the shade for eastern shipment, the balance being packed iced in field for trucking to local markets. No data of the amount sent to the shade were found, so that an arbitrary allowance of 10 per cent monthly was made in calculating the table (#3).

Dry-packing of lettuce is counted to an average of 8 hours per day (because of weather limitations), resulting in an average output of 8 man hour crates per man day of 8 hours. Thus the required number of man hours employed for each crate for the particular job is obtained.

Lemons and Oranges.-- Rate of output is reported as packed boxes. Three field boxes make two packed boxes.

Avocados.-- Figured on basis of 60 per cent harvested by contract labor.

Reported by:

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Assisted by:

January 17, 1936.